EUB

Well Drilling and Completion Data Filing Requirements

Operations Covered:

- Drilling a New Well
- Re-entering an Existing Well
- Initial Completion of a New Well
- Completion of a New Zone
- Performing a Workover
- Surface Abandonment of a Well
- Abandoning a Zone in a Well

Alberta Energy and Utilities Board

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Guide 59 Well Drilling and Completion Data Filing Requirements

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How to Use This Guide

Overview of the Guide

Section 12.010 of the Oil and Gas Conservation Regulations requires the licensee or a representative of the licensee to keep and file records and reports of daily operations on wells which are in the process of being drilled, completed, reconditioned, or abandoned in accordance with the current edition of this guide, *Guide 59: Well Drilling and Completion Data Filing Requirements*. A copy of these records and the required well record (WR) summary reports of the operations performed must be filed as a complete package with the Well Data Services (WDS) section of the Alberta Energy and Utilities Board (EUB) at its Calgary office.

The EUB collects the data to maintain an accurate record of each well drilled in the province both for its own use and for the use of the oil and gas industry in performing drilling and servicing operations in a safe and efficient manner.

The EUB has developed this guide to assist industry in filing operations information in a timely manner and to ensure data integrity. The guide describes the requirements for completing each of the four summary reports on forms WR-1: Well Identification and Operational Status Report, WR-2: Well Drilling Data, WR-2A: Well Incident Data, and WR-3: Well Completion Data.

What's New in This Edition

This February 2000 edition of *Guide 59* incorporates many clarifications and modifications that have been added to improve the instructional sections.

Major changes include the following:

- A discussion in the Overview on Industry Compliance provides background on the EUB's enforcement and compliance policy regarding well records data submission requirements and gives a summary of potential business rules that will be implemented in stages upon completion of the Well Records System (WRS) re-engineering and implementation of electronic filing.

- The guide is no longer structured by units but rather by applicable WR summary form. Unit 1 is now WR-1.

- Form WR-1: Well Identification and Operational Status Report contains, in addition to a check box for Surface Abandonment operations, all details required for reporting summary data for surface abandonments. The former Unit 5: Well Abandonment Notification Form and Guide and Form WR-4: Well Abandonment Notification are rescinded.

- Form WR-2: Well Drilling Data

  - Step 3. Casing/Liner and Cementing Details, Casing Liner Record — "Casing Code" box has been added to identify the type of casing being reported. "Casing Grade" — now requires you to report steel process (s/p) and yield strength (y/p) values.

  - A table of Casing Densities has been added in the guide.

  - Step 3. Casing/Liner and Cementing Details, Cementing Record, no longer requires you to report cement stage numbers.

- Form WR-3: Well Completion Data

  - Step 1. Well Identification requires you to report total well depth and indicate if the well status is Abandoned and Whipstocked.

  - Step 4. Initial Perforation Flow Data is deleted.

- Appendix 1 includes several new definitions and clarifications to aid you in completing the WR summary data forms.

General Reporting Requirements

When a well is in the process of being drilled, completed, reconditioned, or abandoned, the licensee or its representative must keep at the well or the field office a daily record of operations performed.

The daily report must set out complete data on all operations carried on during the day for drilling, fishing, shooting, perforating, acidizing, fracturing, surveying, testing, and abandonment operations. The information that the daily report must contain is outlined in Appendix 3 of this guide. As well, any suspension of operations must be noted on the current daily report.

Within 30 days from the conclusion of the operation, the licensee or its representative must file with the EUB one copy of the daily records and a summary of the operations performed on appropriate WR summary reports. As well, a duplicate copy of the records must be retained as a part of the well record.

If a Change of Well Status Statement (S-4) is being filed, WR summary reports must be filed with the EUB prior to the S-4 statement submission.

The EUB may, if deemed necessary, require the licensee or its representative to file additional information for audit purposes or for clarification of the submitted WR report summary data (i.e., Well Schematics).

Industry Compliance

The EUB believes that compliance in meeting or exceeding regulations and standards is the responsibility of the energy industry. The EUB expects all industry participants to understand its requirements and have an infrastructure in place to ensure compliance. With the development of this document, the regulatory authority for submission of the reporting requirements for drilling, completion, reconditioning, and abandonment data was reviewed, updated, and relegated to this *Guide 59*.

Enforcement and noncompliance consequences were issues discussed in our industry focus groups in early 1998. The majority of the focus groups' industry representatives was in favour of enforcement measures and agreed that implementation timing after the industry had a chance to use and become familiar with the new process was reasonable.

The EUB believes that it is appropriate and practical to stage in noncompliance measures, since the second phase of the Well Records System (WRS) remains to be completed. The second phase will deal with the electronic submission of summary data presently submitted on paper forms.

Enforcement ladders and noncompliance consequences are presently being developed for escalating occurrences of noncompliance. It is the EUB's intention to fashion the ladder similar to the EUB's generic enforcement ladder. Industry consultation will occur prior to the implementation of any enforcement ladder or noncompliance consequences.

However, EUB staff will be developing and conducting an audit process prior to the issuance of enforcement ladders and noncompliance consequences. WR summary data packages, with errors and/or omissions, that do not pass the audit process will be returned unprocessed.

Below is a summary of the business rules for which noncompliance consequences could be applied in this first stage of our noncompliance program:

Overdue wells

A licensee who has overdue well data is noncompliant with the general requirement to submit WR data as set out in *Guide 59*. Wells with data 30 days overdue will be noncompliant once verification that WR packages have not been received and drilling has been completed. The licensee will be invoiced for a noncompliance fee.

Additionally, when a request, by e-mail or by phone, determines that required data have not been submitted, the well licensee is non-compliant and will be invoiced for a non-compliance fee.

An appeal process will be available for circumstances beyond the licensee's control.

Incomplete WR summary packages

WR summary packages received without the accompanying daily reports (tours/ completion/workover reports) will be considered as noncompliant with EUB requirements as set out in *Guide 59*. The licensee will be invoiced for a noncompliance fee.

Wells with no completion intervals

A licensee with wells for which an S-4: Change of Well Status Statement is received and processed but no completion information has been received is noncompliant with *Guide 59* requirements and will be invoiced for a noncompliance fee.

Failure to respond to request letter(s)

A licensee that has been found to be noncompliant with *Guide 59* requirements for the submission of data, has been sent a request by letter for the information, and has not responded within the time frame set out in the request will be invoiced for a noncompliance fee and will also be elevated up one rung on the noncompliance ladder.

Surface abandonment performed – downhole work is missing

If notification has been received from the licensee that a surface abandonment is complete, yet downhole abandonment work is missing and 30 days have elapsed from the date of the abandonment operation performed, the licensee is noncompliant and will be invoiced for a noncompliance fee.

What This Guide Contains

The guide has four sections, each corresponding to a particular summary form, with a copy of the applicable form at the beginning of each section. Four appendices follow.

A step-by-step process guides you through the entering of data elements on each form. The operation being reported dictates which forms you must complete. The following rules summarize the usage of the forms and provide guidance on which forms go together to form a complete submission. You must complete all boxes on each form in full, including blanks/zeroes.

WR-1: Well Identification and Operational Status Report

A completed form WR-1 is required for all submissions.

Form WR-1 provides information regarding the licensee, identification of the well being reported, and the operation being reported.

You must complete all applicable parts of the form for all submissions and attach additional forms as appropriate for the operation conducted.

Before reporting WR-3: Well Completion Data, you must file all WR-2: Well Drilling Data and WR-2A: Well Incident Data (if applicable) forms. If not, the WR-3: Well Completion Data form will be returned unprocessed.

When reporting a surface abandonment, if not previously filed, you must complete the parts of forms WR-2 or WR-3 that show the downhole abandonment work.

In addition, when reporting a surface abandonment, if you are not the 100 per cent working interest owner in the well, you must also file form 4.1 (see *Guide 56: Energy Development Application Guide and Schedules*, Unit 4), a statement of working interest owners at the time of abandonment.

WR-2: Well Incident Data

You must file form WR-2 for all drilling operations.

Attach completed form WR-2 to a completed WR-1 for all submissions.

Complete all parts of the form applicable to the drilling operation being reported.

WR-2A: Well Incident Data

You must file form WR-2A if any of the following incidents occurred during the drilling, completion, or workover of a well:

- you encountered lost circulation
- you had a kick, blow, or blowout
- you encountered a situation where water flowed into the wellbore

File the completed WR-2A together with completed forms WR-1 and WR-2 or WR-3.

WR-3: Well Completion Data

You must file form WR-3 for all operations involved in the completion, reworking, or downhole abandonment of a well.

Attach completed form WR-3 to a completed WR-1 for all submissions.

Complete all parts of the form applicable to the operation being reported.

Appendices

Appendices 1-3 contain applicable policy and technical information, with detailed explanations for specific information/data elements.

Appendix 4 is a Feedback Form, on which your comments and suggestions about improvements to the guide and forms can be recorded and submitted to the EUB.

References

Three external references are cited in the guide:

- Oil and Gas Conservation Regulations (OGC Regulations), Alberta Regulation 151/71, as amended
- EUB *Guide 44: Licensee/Agent Code List*
- EUB *Guide 56: Energy Development Application Guide and Schedules*

The OGC Regulations and *Guide 56* are available on the EUB Web site (www.eub.gov.ab.ca).

Guides 44 and *56* are also available from

EUB Information Services
640 – 5 Avenue SW, Main Floor
Calgary AB T2P 3G4
Tel: (403) 297-8190
Fax: (403) 297-7040

Guide Help Line

This guide should answer the majority of your questions. If after careful study, you have a specific question not covered in this guide, please contact the help line at (403) 297-8696.

Submitting Your Well Drilling and Completion Data Packages

Submit one copy of the completed WR-1: Well Identification and Operational Status Report form with applicable supplementary forms and the detailed daily records of drilling, completion, reconditioning, or abandonment operations as a package to the

Alberta Energy and Utilities Board
Production and Well Data Services Group
640 – 5 Avenue SW
Calgary AB T2P 3G4

WR-1

Well Identification and Operational Status Report Form and Guide

EUB Alberta Energy and Utilities Board

Form WR-1
Well Identification and Operational Status Report

1. WELL IDENTIFICATION

Well Name

Unique Well Identifier

1						W
	LE	LSD	SEC	TWP	RGE	M

Licence Number

2. WELL LICENSEE IDENTIFICATION

Date

Year	Month	Day

Company Name

Company Code

Submitting Company

Submitting Company Code

Contact (Print)

Fax Number (Including Area Code)

Telephone Number (Including Area Code)

Email Address

3. OPERATIONAL CHANGE TO THE WELL

Drilling ☐ (Attach form WR-2 and/or WR-2A.)

Completion/Workover ☐ (Attach Form WR-3 and/or WR-2A.)

Surface Abandonment ☐ (If checked, fill in the section below.)

Ownership: Licensee holds a 100% working interest in the well.

☐ Yes ☐ No

Type of Surface Abandonment (Check one)

☐ Open Hole ☐ Cased Hole

Surface Abandonment Date

Year	Month	Day

EUB Use Only

Processed

Date

File #

Note: The abandonment operation does not relieve the licensee or its assignee from the responsibility of further abandonment or other operations that may from time to time become necessary.

Well Identification and Operational Status Report Guide

When to Use Form WR-1

Use form WR-1 when you have performed any of the following operations at a well:

- finished drilling a new well
- re-entered an existing well
- completed a new well
- completed a new zone
- performed a workover
- abandoned a zone in a well
- abandoned a well at surface

You must submit this form and the appropriate summary form(s) and **all other supporting detailed documentation** (tour reports and/or completion/workover reports) to the EUB within 30 calendar days of the finish date of the particular operation being reported.

Step 1: Well Identification

Well Name

Enter the official well name.

Well names may be a maximum of 36 characters, including spaces and locations, as required by Section 13.020 of the Oil and Gas Conservation Regulations.

Unique Well Identifier

Enter the unique identifier for the well on which the reported operation was performed. (See Appendix 2: Unique Well Identifier.)

You do not have to report the event sequence portion of the identifier on the WR-1.

Licence Number

Enter the seven-digit licence number of the well, as well as the prefix and/or suffix where applicable.

Step 2: Well Licensee Identification

Date

Enter the date on which you submit this form to the EUB.

Company Name

Enter the licensee's company name.

Company Code

Enter the licensee's assigned four-digit EUB company code. (See *Guide 44*.)

Submitting Company	If the company completing the forms is not the licensee, enter the name and EUB company code of the company that is completing the forms on behalf of the licensee.
Submitting Company Code	Enter the submitting company's four-digit EUB company code. (See *Guide 44*.)
Contact	Enter the name of the person responsible for preparing this form. This is the person who will be contacted by the EUB in case of discrepancies.
Fax No./Telephone/Email Address	Enter the facsimile (fax) number (with area code), business telephone number (with area code), or email address of the contact person.

Step 3: Operational Change to the Well

Check one or more boxes, as appropriate.

Drilling	Check this box if drilling or re-entry operations of an existing well are being reported. (See Appendix 1.) In this case, attach Well Drilling Data Form WR-2 and, if applicable, Well Drilling Incident Data Form WR-2A.
Completion/Workover	Check this box if the operation being reported is the initial completion of a well, a workover/recompletion operation, or a zone abandonment. (See Appendix 1.) In this case, attach Well Completion Data Form WR-3 and, if applicable, Well Incident Data Form WR-2A. Note that Form WR-3 is only required to be submitted on completed workover operations where an operation type code is applicable (see WR-3, Step 2, Table 13) or a packing device date is being reported.
Surface Abandonment	Check this box if the operation being reported is the surface abandonment of the well. If so, complete the following:
Ownership	Check **Yes** if the licensee holds 100% working interest in the well. If **No**, you must also file form 4.1 (see *Guide 56: Energy Development Application Guide and Schedules*, Unit 4), a statement of working interest owners at the time of abandonment.
Type of Surface Abandonment	Check the method of surface abandonment used.

Open Hole	Check this box if abandonment was conducted after the initial drilling but before rig release.
Cased Hole	Check this box if abandonment was conducted on a completed or cased hole.
Surface Abandonment Date	Enter the date the surface abandonment was carried out.

WR-2

Well Drilling Data Form and Guide

EUB Alberta Energy and Utilities Board

Form WR-2
Well Drilling Data

1. WELL IDENTIFICATION

Unique Well Identifier

1						W	
	LE	LSD	SEC	TWP	RGE	M	ES

Licence Number

2. WELL DATA

Drilling Contractor Code

Rig Number

Spud Date (Year / Month / Day)

Finished Drilling Date (Year / Month / Day)

Rig Release Date (Year / Month / Day)

Kelly Bushing Elevation (m)

Total Depth (mKB)

Plug-Back Depth (mKB)

Well Is Re-entry? ☐ Yes

Initial Status: ☐ Drilled & Cased ☐ Abandoned ☐ Abandoned & Whipstocked ☐ Junked & Abandoned ☐ Drain

3. CASING / LINER AND CEMENTING DETAILS

Date Year	Month	Day	Casing Code	Casing/Liner OD	Casing Grade S/P	Y/S	Density (kg/m)	Shoe Set Depth (mKB)	Liner Top Depth (mKB)	Cement Code	Unit Code	Cement Amount	Interval (mKB) Top	Base

4. CORE SUMMARY

Core No.	Sidewall Y/N	Interval (mKB) Top	Base

5. DRILLSTEM TEST SUMMARY

Test No.	Test Type Code	Interval (mKB) Top	Base

6. KICKOFF POINT

Date Year	Month	Day	Depth (mKB)	Code

7. PLUG BACKS / ABANDONMENTS

Date Year	Month	Day	Purpose Code	Interval (mKB) Top	Base	Unit Code	Cement Amount	Method Code	Log/Tag Code

EUB Use Only

Processed _____

Date _____

Page ____ of ____

Well Drilling Data Guide

When to Use Form WR-2

Use form WR-2 to record
- initial drilling operations
- re-entry of an existing well

You must submit this form with form WR-1 and include **all other supporting detailed documentation (tour reports) from spud to rig release inclusive** to the EUB within 30 calendar days of the finish date of the drilling operation to the final depth of the well being reported.

Complete one form for each leg (event) of a multileg well. (See Appendix 1.)

An event is created when any one of the following occurs:
- the leg reaches horizontal (80-90°)
- any cores are cut on the leg
- any drillstem tests or logs are run on the leg
- the total measured depth of the leg is greater than any of the other legs in the well

Step 1: Well Identification

Unique Well Identifier

Enter the unique identifier for the well event on which the reported operation was performed. (See Appendix 2.)

Licence Number

Enter the seven-digit licence number of the well, as well as the prefix and/or suffix where applicable.

Step 2: Well Data

Drilling Contractor Code

Enter the drilling contractor's assigned four-digit EUB code. (See *Guide 44*.)

Leave blank if a service rig is used.

Rig Number

Enter the drilling rig number assigned to the contractor.

Leave blank if a service rig is used.

Spud Date

Enter the date on which drilling of the well begins.

Drilling to set conductor casing is not considered spud unless it is conducted by the drilling rig that continues to drill the remainder of the well.

Drilling surface hole and setting of surface casing by a surface hole rig constitutes spud of a well.

In cases of re-entry of a well for production or injection purposes, provide the date that the re-entry operations begin.

Finished Drilling Date

Enter the date on which total depth is reached. (See Appendix 1.)

The finished drilling date includes the completion of any drilling operations conducted with a coiled tubing unit to reach the total depth.

Rig Release Date

Enter the date on which all drilling operations are completed and the contractor is released from the well site.

Kelly Bushing Elevation

Enter the kelly bushing elevation in metres to a maximum of five digits, including one decimal place.

Kelly bushing elevations are required for re-entry operations.

Total Depth

Enter the total depth in metres kelly bushing to a maximum of five digits, including one decimal place.

Plug-Back Depth

A plug-back depth (top tagged or drilled-out depth) is required only in the following circumstances: plug back to set a casing, whipstock plug, or lost circulation plug left in the well.

Enter the depth of the top of the last plug in the well in metres kelly bushing to a maximum of five digits, including one decimal place.

For horizontal recompletions, the plug-back depth is the depth of the whipstock packer, if one is used.

For re-entries of abandoned wells, the plug-back depth is the top of the cement that remains in the well.

Well Is Re-entry

Check the box if the well is being reported is a re-entry of a previously abandoned well.

Initial Status

Check the box indicating the initial status for the unique identifier well event applicable at the completion of the drilling operation.

If none of the five initial statuses is applicable, an S-4 Change of Well Status Statement form must be sent in for the well event.

Step 3: Casing/Liner and Cementing Details

You must duplicate casing/cementing details from the common portion of the wellbore for each event of a multileg well.

If an open hole or uncemented liner exists after drilling operations have been completed, you must complete and submit a Well Completion Data form (WR-3) to indicate the open hole interval.

Note that a casing/liner record is not required for uncemented tubing.

Date

Enter the dates in chronological order that the casings/liners were set.

Dates are not required for existing casings/liners in re-entered wells.

Casing Code

Enter the code from Table 1 that corresponds to the type of casing being reported.

Table 1

Casing type	Code
Conductor	1
Surface	2
Intermediate	3
Production	4
Liner	5

Casing/Liner OD

Enter the outside diameter of each casing/liner in millimetres to a maximum of five digits, including one decimal place.

If more than one size of casing is run in one string (tapered casing), see Appendix 1 for an example.

Casing Grade

Enter the casing grade of each casing/liner to a maximum of three alpha characters for steel process (s/p) or three numeric characters for yield strength (y/s).

Density

Enter the linear density (weight) of the casing/liner from Table 2 in kilograms per metre to a maximum of four digits, including one decimal place.

Table 2

Size (mm)	Casing densities (kg/m)							
38.1	2.4							
52.4	4.8							
60.3	6.0	6.8	8.6					
73.0	9.5	9.5	12.8					
88.9	11.5	13.7	15.2	18.9				
101.6	14.1							
114.3	14.1	15.6	17.3	20.1				
127.0	17.1	19.4	22.3	26.8				
139.7	20.8	23.1	25.3	29.8	34.2			
168.3	29.8	35.7	41.7	47.6				
177.8	25.3	29.8	34.2	38.7	43.2	47.6	52.1	56.6
193.7	35.7	39.3	44.2	50.2	59.0			
219.1	35.7	41.6	47.6	53.6	59.5	65.5	72.9	
244.5	48.1	53.6	59.5	64.7	69.9	79.6		
273.0	48.7	60.3	67.7	75.9	82.6			
298.4	62.5	69.9	80.4	89.3				
339.7	71.4	81.1	90.8	101.2	107.2			
406.4	96.7	111.6	125.0					
473.1	130.2							
508.0	139.9	158.5	197.9					

If there are multiple densities, enter the highest density.

The casing/liner density is not required for existing casings/liners in re-entered wells.

Shoe Set Depth

Enter the setting depth of the casing/liner in metres kelly bushing to a maximum of five digits, including one decimal place.

If a window is milled in the casing, the shoe set depth will be equal to the top of the window.

Liner Top Depth

Enter the depth at which the liner is hung (liner top) in metres kelly bushing to a maximum of five digits, including one decimal place.

Cementing Record

Record cements in the order that they are pumped into the well.

You are not required to record cements for existing casings in re-entered wells.

Cement Code

Enter the code from Table 3 for the type of cement used. Do not record scavenger cements.

Table 3

Cement	Code
Class A	01
Class C	03
Class G	04
1:1:2	06
1:1:4	07
Thermal cements	30
Thixotropic cement	31
Lightweight	42
Foamed cement	36
Cap cement (capping foamed cement)	40
Tapered casing	90
Uncemented slotted liner	91
Uncemented casing	92

For each casing run, there may be several lines of cementing details. See Appendix 1 for an example.

Unit Code

Enter the code from Table 4 for the unit of measurement used for the cement.

Table 4

Cement	Code
Cubic metres	1
Tonnes	2
Sacks	3
Litres	4

Amount

Enter the amount of cement used to a maximum of five digits, including one decimal place.

Interval

Enter either the estimated or actual interval of the wellbore that is cemented or left uncemented.

Enter the **top** of the interval in metres kelly bushing to a maximum of five digits, including one decimal place.

Enter the **base** of the interval in metres kelly bushing to a maximum of five digits, including one decimal place.

Step 4: Core Summary

Core Number

Enter the number of the core(s) cut in the chronological order that they are cut.

If additional cores are cut on a new leg (event), they must be renumbered beginning at 1.

Sidewall

Enter **Y** if coring method is sidewall.

Enter **N** if method is other than sidewall.

Interval

Enter the interval of the wellbore that was cut.

Enter the **top** of the interval in metres kelly bushing to maximum of five digits, including one decimal place.

Enter the **base** of the interval in metres kelly bushing to maximum of five digits, including one decimal place.

If recording a sidewall core, enter a single depth at which each sidewall core was taken. Enter this in the field "Interval, Top."

Cores in oil sands areas are usually cut in 6 m runs for 80-90 m. For oil sands cores, record the cored interval as one interval, indicating the top and the base of the interval.

Step 5: Drillstem Test Summary

Test Number

Enter the number of the tests run, in chronological order. You must also report drillstem tests determined to be misrun.

If you run additional tests on a new leg (event), number the tests from 1.

Test Type Code

Enter the code from Table 5 for the type of test conducted.

Table 5

Type	Code
Bottomhole	1
Straddle	2
Closed chamber	7
Air drill flow	8

Interval

Enter the interval of the section of the wellbore tested.

Enter the **top** of the interval in metres kelly bushing to a maximum of five digits, including one decimal place.

Enter the **base** of the interval in metres kelly bushing to a maximum of five digits, including one decimal place.

Step 6: Kickoff Point

Date

Enter the dates that kickoff drilling began in chronological order.

Depth

Enter the depth of kickoff (do not record instances of natural deviation) in metres kelly bushing to a maximum of five digits, including one decimal place. (See Appendix 1.)

Code

Enter the code from Table 6 indicating the reason for kickoff.

Table 6

Reason	Code
Deviate (<80°)	1
Sidetrack fish	2
Horizontal (>80°)	4

Step 7: Plug Backs/Abandonments

Only record cement plugs that are left in the well at rig release.

Do not record cement plugs that are run in a leg of a well not considered a drilling event (e.g., a ghost hole). (See Appendix 1.)

You may use a 3 m high-density cement plug where the plug length is an operational issue. If the plug is less than 3 m, you must get preapproval from the EUB Surveillance Branch Operations Group.

Date

Enter the dates the plug was run, including kickoff plugs, in chronological order.

Purpose Code

Enter the code from Table 7 for the purpose of the cementing operation. (See Appendix 1.)

Table 7

Purpose	Code
Abandon	1
Plug back and case	3
Plug back and whipstock	4
Plug back and sidetrack (fish)	5
Plug back and straighten	6
Lost circulation plug (not drilled out)	7

Interval

Enter the interval of the wellbore that the plug covers, with the top of the interval being the top felt depth if the plug is felt or the drilled-out depth. If the plug is not felt, record the planned interval.

Enter the **top** of the interval in metres kelly bushing to a maximum of five digits, including one decimal point.

Enter the **base** of the interval in metres kelly bushing to a maximum of five digits, including one decimal point.

Unit Code

Enter the code from Table 8 for the unit of measurement used for the cement volume.

Table 8

Unit	Code
Cubic metres	1
Tonnes	2
Sacks	3
Litres	4

Cement Amount

Enter the amount of cement used to a maximum of five digits, including one decimal place.

Method Code

Enter the code from Table 9 for the method by which the abandonment or plug back was performed. (See Appendix 1.)

Table 9

Method	Code
Rerun plug	03
Cement plug	51
Packing device capped with cement	53

Log/Tag Code

Enter the code from Table 10 for the method by which the plug was felt.

Table 10

Method	Code
Log	1
Tag	2
Not felt	3

WR-2A

Well Incident Data Form and Guide

EUB Alberta Energy and Utilities Board

Form WR-2A
Well Incident Data

1. WELL IDENTIFICATION

Unique Well Identifier

1						W	
	LE	LSD	SEC	TWP	RGE	M	ES

Licence Number

2. WELL KICK / LOST CIRCULATION / WATER FLOW

Occ Type Code	Opr in Prog Code	OCCURRENCE DATA					OCCURRENCE CONTROLLED					Lost Circulation Total Fluid Loss (m^3)	Water Flow Average Influx (m^3/d)
		Date Year	Month	Day	Depth (mKB)	Mud Density (kg/m^3)	Date Year	Month	Day	Depth (mKB)	Mud Density (kg/m^3)		
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-
					-					-		-	-

EUB Use Only

Processed _____

Date _____

Well Incident Data

When to Use Form WR-2A

Use form WR-2A if any of the following occurs during the drilling, completion, or workover of a well (see Appendix 1):

- lost circulation
- kick, blow, or blowout
- water flow (record all water flows whether they occur at surface or downhole)

You must submit this form with forms WR-1 and WR-2 and/or WR-3 and **all other supporting detailed documentation** (tour reports and completion/workover reports) to the EUB within 30 calendar days of the finish date of the operation being reported.

This form is for summary data purposes only.
Note that in the event of a blow or blowout, you must notify the appropriate EUB field centre immediately.

Step 1: Well Identification

Unique Well Identifier

Enter the unique identifier for the well on which the reported incident occurred. (See Appendix 2.)

Licence Number

Enter the seven-digit licence number of the well, as well as the prefix and/or suffix where applicable.

Step 2: Well Kick/Lost Circulation/Water Flow

Occurrence Type Code

Enter the code from Table 11 that describes the occurrence you are reporting.

Table 11

Occurrence	Code
Kick	10
Blow	20
Blowout	30
Lost circulation	40
Water flow	50

Operation in Progress Code

Enter the code from Table 12 for the operation in progress when the incident began.

Table 12

Operation	Code	Operation	Code
Drilling	1	Tripping in	5
Circulating	2	Tripping out	6
Coring	3	Running casing	7
Logging	4	Testing	8

Occurrence Data - Date

Enter the date that the incident began.

Occurrence Data - Depth

Enter the depth of operations when the incident began in metres kelly bushing to a maximum of five digits, including one decimal place.

Occurrence Data Mud - Density

Enter the density of fluid when the incident began in kilograms per cubic metre to a maximum of four digits, with no decimal place.

Occurrence Controlled - Date

Enter the date that the incident was controlled.

Occurrence Controlled – Depth

Enter the depth of operations when the incident was controlled in metres kelly bushing to a maximum of five digits, including one decimal place.

Occurrence Controlled - Mud Density

Enter the density of fluid when the incident was controlled in kilograms per cubic metre to a maximum of four digits, with no decimal place.

If a cement plug was used to control the incident, enter 2499. If casing was used, enter 2500.

Lost Circulation Total Fluid Loss

If you are recording a lost circulation, enter an estimate of the volume of fluid lost during the incident in cubic metres to a maximum of five digits, including one decimal place.

Water Flow Average Influx

If you are recording a water flow, enter the estimated average volume of fluid flowing into the wellbore in cubic metres per day to a maximum of five digits, including one decimal place.

If you are not recording a water flow, leave blank.

WR-3

Well Completion Data Form and Guide

EUB Alberta Energy and Utilities Board

Form WR-3
Well Completion Data

1. WELL IDENTIFICATION

Unique Well Identifier

1						W	
	LE	LSD	SEC	TWP	RGE	M	ES

Licence Number

Plug-Back Depth _____ (mKB)

Total Depth _____ (mKB)

Abandoned & Whipstocked ☐

2. COMPLETIONS OPERATIONS

Date Year	Month	Day	Oper Type Code	Interval (mKB) Top	Base	Shots per metre	Unit Code	Cement Amount	Abandoned Zone

3. UNCEMENTED PACKING DEVICES AND RETAINERS

Date Year	Month	Day	Operation Pulled	Set	Code	Depth (mKB)

EUB Use Only

Processed _____

Date _____

Page _____ of _____

Well Completion Data Guide

When to Use Form WR-3

Use form WR-3 when you have

- completed a new well
- completed a new zone
- performed a workover
- abandoned a zone in a well

You must submit this form with form WR-1 and **all other supporting detailed documentation** (completion/workover reports) to the EUB within 30 calendar days of the finish date of the operation being reported.

Do not file a WR-3 form for pump changes or hole cleanouts.

Complete one form for each zone (event) of a well. (See Appendix 2.)

The following rules apply to the creation of event sequences:

- Initial completion in a well is assigned the zero event sequence.
- Subsequent completion(s) are assigned the available numerical value, starting at two (2).
- Event sequence codes are assigned chronologically. However, if multiple zones are completed in the same operation, the lower zone is deemed to be completed first.
- If a lower zone is completed at a later date, the lower zone carries the subsequent event sequence.
- A new event sequence is required when an existing well is deepened to a new geologic horizon and there are previous completions on the well.

Step 1: Well Identification

Unique Well Identifier

Enter the unique identifier for the well event on which the reported operation was performed. (See Appendix 2.)

Licence Number

Enter the seven-digit licence number of the well, including the prefix and/or suffix where applicable.

Plug-Back Depth

A plug back depth (top tagged or drilled out depth) is required only in the following circumstances, plug back to set a casing, whipstock plug, or lost circulation plug left in the well.

Enter the depth of the top of the last plug in the well in metres kelly bushing to a maximum of five digits, including one decimal place.

For horizontal recompletions, the plug-back depth is the depth of the whipstock packer, if one is used.

New Total Depth

Enter the total depth in metres kelly bushing to a maximum of five digits, including one decimal place. Total depth indications are required for **barefoot** completions only.

Abandoned and Whipstocked

Check this box if the new status of the well is abandoned and whipstocked.

Step 2: Completions Operations

You must complete a completions operations record for every open leg (event) on a multileg well that has a zone capable of production.

You must duplicate casing/cementing details from the common portion of the wellbore for each event of a multileg well. Complete a separate WR-3 form for each zone or leg (event) of a well.

You only need to report information from a new completion operation.

You may use a 3 m high-density cement plug where the plug length is an operational issue. If the plug is less than 3 m, you must get preapproval from the EUB Surveillance Branch Operations Group.

Date

Enter the dates of each operation performed in chronological order.

Operation Type Code

Enter the code from Table 13 for the type of operation performed. (See Appendix 1.)

Interval

Enter the applicable intervals of the wellbore (see Interval Recorded column in Table 13).

Enter the **top** of the interval in metres kelly bushing to a maximum of five digits, including one decimal point.

Enter the **base** of the interval in metres kelly bushing to a maximum of five digits, including one decimal point.

Table 13

Operation	Code	Interval Recorded
Perforation	02	Interval perforated
Hydra jet perforation (sand notching)	05	Interval cut
Slotted liner	07	Interval left uncemented
Open hole/barefoot completion	08	Casing shoe to total depth
Acid treatment	12	Completed interval treated
Chemical squeeze	23	Completed interval treated
Alcohol squeeze	24	Completed interval treated
Fracture	41	Completed interval treated
Cement plug	51	Interval of plug
Cement squeeze (only record if successful)	52	Completed interval cemented
Packing device capped with cement	53	Top of cement to top of packing device
Casing patch (only record if it covers a completed interval)	54	Completed interval covered by patch
Packing device with no cement	55	Top of packing device to bottom of packing device
Remedial casing cementing	56	Completed interval cemented

Shots per Metre

If the well is perforated, enter the number of shots (perforations) made per metre to a maximum of three digits.

Unit Code

Enter the code from Table 14 for the unit of measurement used for the cement amount.

Table 14

Unit	Code
Cubic metres	1
Tonnes	2
Sacks	3
Litres	4
Metres	5

Cement Amount

Enter the amount of cement used for cementing operations to a maximum of four digits, including one decimal place.

Abandoned Zone

Check this box if the purpose of the operation is to abandon the zone. Leave blank if zone is not abandoned. (See Appendix 1.)

An abandoned zone is a previously completed zone that has been officially abandoned with cement and/or packing device(s) **where at least one other unique event sequence exists in the well.**

Step 3: Uncemented Packing Devices and Retainers

Only report the packing devices that are set in the well and remain at the end of the operation.

Ensure that any previously set packing devices that are pulled out of the well or pushed downhole in this operation are recorded as pulled.

Do not record external casing packers on the WR-3 form.

Date

Enter the date the device was **set** in the well.

No date is required for a **pull**.

Operation Pulled/Set

Check **Pulled** if a previously set device is removed from the well during this operation.

Check **Set** if a device is set during this operation and remains at the end of the operation.

If a packing device capped with cement (set above perforations or an open hole) is drilled out, you must enter the perforations or open hole in the Completions Operations record (Step 2) to again show them as reopened as of the date the packing device is drilled out.

Code

Enter the code from Table 15 for the type of packing device.

Table 15

Type	Code
Packer	1
Packing device or whipstock packer	2
Cement retainer	3

Depth

Enter the depth that the device is set in the well in metres kelly bushing to a maximum of five digits, including one decimal place.

Appendix 1 Policy and Technical Issues Relative to Well Drilling and Completion Data

Status Definitions

Finished drilling date

The finished date is defined as the date at which the total depth of a well is reached.

The finished drilling date includes the completion of any drilling operations conducted with a coiled tubing unit to reach the total depth.

Drilled and cased

A well that has been drilled and cased but not immediately put on production.

Abandoned

A well that has been drilled, abandoned, and cut and capped at surface.

Abandoned and whipstocked

A portion of a well that has been drilled and then abandoned and requires an event sequence to be created. A whipstocked leg is then drilled from the original borehole.

Junked and abandoned

If a well has been drilled and abandoned due to drilling or mechanical problems at a total depth of 150 m or less, it is not considered to be a well. No information is required by the EUB for this drilling operation. If the rig is skidded and the well is respud, the same licence can be used.

If the same situation occurs but the well is drilled to a total depth greater than 150 m, it is considered to be a well and all drilling and abandonment information, with the status changed to junked and abandoned, is required to be sent to the EUB. If the rig is to be skidded and a new well spud, an application for a new licence must be filed with the EUB Applications Branch (see *Guide 56: Energy Development Application Guide and Schedules*).

Drain

More than one event (leg) in a multilateral horizontal well is open to the same formation and is capable of production. The event that you consider to be the main contributor to production carries the producing status. The other contributing legs (events) will carry a drain status.

Re-entry/Resume/Deepening Operations

Re-entry operations

An abandoned well licensed to another company is re-entered by a different company. An application for a well licence is required to be filed and approved by the Applications Branch (see *Guide 56: Energy Development and Application Guide and Schedules*) before the re-entry operations begin.

The status of the original well will be changed to "Abandoned and Re-entered" by the EUB's Well Data Services Section when the WR summary forms have been received and the information processed.

Multileg well

A well having more than one drilled hole or leg. It can be created during the initial drilling of the well or during the re-entry into an existing well and whipstocking and also applies to horizontal drilling.

Event sequences are to be assigned in the order that the legs are drilled.

Ghost holes

A ghost hole is an attempt to drill a whipstocked leg that

- does not reach 80°,
- does not have any logs, drillstem tests, or cores attributed to it, or
- does not have a total measured depth greater than any of the other legs on the well.

Ghost holes are not considered to be events and therefore do not require event sequence numbers assigned. Cement plug operations performed in a ghost hole or leg are not required to be reported to the EUB.

Resumption of drilling operations

An existing well, whether abandoned or not, is entered for the purpose of deepening, whipstocking, recompletion (abandoned well only), or horizontal recompletion.

The well licence must belong to the company performing the resume drilling operations. Prior approval must be obtained from the Applications Branch (see *Guide 56: Energy Development Application Guide and Schedules*) unless the resume drilling operations occur within six months of the spud and the terminating formation and type of drilling operation (vertical, directional, or horizontal) are the same as originally licensed.

If a nonabandoned well is being re-entered and subsequently abandoned in order to whipstock, "Abandoned and Whipstock" status must be checked on Form WR-3 in Step 1. The abandonment details must also be documented on the WR-3 Form in Step 2 for the event sequence that is being abandoned.

In cases of open hole completions to the same formation,

- an additional event sequence is not required if this is the initial completion of the well or if you are drilling into the same terminating formation as the initial completion of the well

- record new open hole interval on form WR-3 in Step 2: Completions Operations

In cases of deepening to a new formation,

- obtain the necessary approval to re-enter/resume from the Applications Branch (see *Guide 56: Energy Development Application Guide and Schedules*)

- record new open hole interval on form WR-3 in Step 2: Completions Operations

Reabandonments

If a cement plug in a previously abandoned well is drilled out and a new cement plug set, enter the new plug details on form WR-2 in Step 7: Plug Backs/Abandonments, with the method indicated as "rerun plug." The status and status date of the well do not change, and the drilled out plug does not have to be indicated.

If the new abandonment plug has to be monitored, the status and status date of the well will still not change.

Drilling Incidents

Kicks

A kick is any entry of fluid into a wellbore that is under control and can be circulated out.

Blows

A blow is the uncontrolled flow of wellbore fluids to the atmosphere. The flow can be shut in with the wellhead valve or blowout prevention equipment or it can be directed to the flare system if the well cannot be shut in indefinitely without exceeding maximum allowable casing pressure (MACP).

Blowouts

A blowout is the complete loss of control of the flow of fluids from a well to the atmosphere or the flow of fluids from one underground reservoir to another (an underground blowout). Wellbore fluids are venting uncontrolled at or near the wellbore and control can only be regained by installing or replacing equipment to shut in or kill the well or by drilling a relief well.

Lost circulation

Lost circulation is the loss of drilling fluids from the wellbore into permeable formations penetrated by the well.

Casing and Cementing

Tapered casing

Tapered casing is more than one size casing run in on the same casing string entirely cemented in one operation. The lower section of casing is recorded as a liner and is therefore required to have a liner top.

3. CASING / LINER AND CEMENTING DETAILS

Year	Month	Day	Casing Code	Casing/Liner OD	Casing Grade L/P	Casing Grade Y/N	Density (kg/m)	Shoe Set Depth (mKB)	Liner Top Depth (mKB)	Cement Code	Unit Code	Cement Amount	Interval (mKB) Top	Interval (mKB) Base
1 9 9 8	0 6	0 4	4	1 3 9 . 7	0 0 J	0 5 5	2 5 . 3	1 5 5 0 . 0	.	0 6	2	1 5 . 8	5 5 0 . 0	1 4 0 0 . 0
				.			.	.	.	0 4	2	4 . 7	1 4 0 0 . 0	1 5 5 0 . 0
1 9 9 8	0 6	0 4	5	1 1 4 . 3	0 0 J	0 5 5	1 4 . 1	1 8 1 0 . 0	1 5 5 0 . 0	0 4	2	3 . 1	1 5 5 0 . 0	1 8 1 0 . 0
				.			.	.	.			.	.	.
				.			.	.	.			.	.	.

Slotted liner run on bottom of cemented section of casing

If the liner and casing have the same outside diameter, report one casing entry to the shoe of the liner (form WR-2). Report two cementing entries as

- slotted uncemented liner (code 91)
- with the actual cementing details

3. CASING / LINER AND CEMENTING DETAILS

Date Year	Month	Day	Casing Code	Casing/Liner OD	Casing Grade J/P	Y/S	Density (kg/m)	Shoe Set Depth (mKB)	Liner Top Depth (mKB)	Cement Code	Unit Code	Cement Amount	Interval (mKB) Top	Base
1 9 9 8	0 7	3 0	5	1 3 9 . 7	0 0 L	0 8 0	2 0 . 8	1 5 5 0 . 0	1 2 5 0 . 0	9 1		.	1 2 5 0 . 0	1 5 0 0 . 0
				.			.	.	2 0 0 . 0	0 4		3 5 . 0	2 0 0 . 0	2 5 0 . 0
				.			.	.	.			.	.	.
				.			.	.	.			.	.	.
				.			.	.	.			.	.	.

If the liner and casing have different outside diameters, record a regular casing entry with the shoe set equal to the stage tool depth. Report the cement details. For the slotted uncemented portion, report a second casing entry with the shoe set equal to the depth of the slotted liner shoe and a liner top depth equal to the top of the liner. Report the cement entry as slotted uncemented liner (code 91).

3. CASING / LINER AND CEMENTING DETAILS

Date Year	Month	Day	Casing Code	Casing/Liner OD	Casing Grade J/P	Y/S	Density (kg/m)	Shoe Set Depth (mKB)	Liner Top Depth (mKB)	Cement Code	Unit Code	Cement Amount	Interval (mKB) Top	Base
1 9 9 8	0 7	3 0	4	2 4 4 . 5	0 0 H	0 4 0	4 8 . 1	1 1 0 0 . 0	.	3 1	1	3 5 . 0	2 5 0 . 0	1 1 0 0 . 0
1 9 9 8	0 7	3 0	5	1 7 7 . 8	0 0 J	0 5 5	3 4 . 2	1 3 0 0 . 0	1 1 0 0 . 0	9 1	2	.	1 1 0 0 . 0	1 3 0 0 . 0
				.			.	.	.			.	.	.
				.			.	.	.			.	.	.
				.			.	.	.			.	.	.

Slotted liner run on bottom of cemented section of casing

When a slotted liner is run in a horizontal well, in addition to reporting it on form WR-2 in Step 3, you must also report it on form WR-3 in Step 2: Completion Operations to show the interval of the well covered by the slotted liner (from the shoe set depth of the previous casing to the shoe set depth of the liner).

If the slotted liner is not run all the way to total depth, the open hole interval must also be recorded from the shoe set depth of the liner to total depth.

Open hole

If after running casing, the casing shoe is drilled out, leaving an open hole, the open hole interval must be reported on form WR-3 in Step 2: Completions Operations, showing the open hole from the shoe set depth of the last casing run to total depth of the well.

Kickoff point

The kickoff point is used to record the starting point of **intentional** deviation increases.

Schematics

There is no specific format set out for a well schematic. However, the schematic must show the following minimum information:

- each drilled leg, with the total measured depth of each
- all casings and liners run and the outside diameters and shoe set depths for each
- kickoff points for each leg

Plug Backs/Abandonment Purpose Code

Abandon	A cement plug or series of cement plugs is run in the hole for the purpose of abandonment.
Plug back and case	A cement plug is run before or after a casing has been set in the hole
Plug back and whipstock	A cement plug is run and is used to achieve the angle for directional or horizontal drilling from the original wellbore.
Plug back and sidetrack (fish)	A portion of the drill string or tools (fish) is stuck downhole and cannot be recovered. A cement plug is run over the fish and a new hole is drilled around the fish to resume drilling operations.
Plug back and straighten	Drilling operations have deviated off target from the intended direction. A cement plug is run in a portion of the drilled hole and drilling operations continue at the correct deviation.
Lost circulation plug (not drilled out)	A cement plug is run over the lost circulation interval to stop the formation from feeding from the hole.
Suspended drilling operations	If a drilling operation ceases and is suspended for any reason, the submission of the WR summary forms is not required until all the final drilling operations are complete.

Operation Type Codes

Perforation	The placement of holes through the casing and cement and into the formation using a perforating gun, or the cutting of the casing and cement using sand-laden fluids to expose a formation.
Slotted liner	A method of completion common for a horizontal well.
Open hole/barefoot completion	An open hole/barefoot completion allows reservoir fluids to flow unrestricted (no casing) into the wellbore. This is a common completion for a horizontal well.
Acid treatment	A volume of acid is circulated down the wellbore over or into a completed interval.
Chemical squeeze	Chemicals are injected into the formation to clean out deposits that have collected in the formation.
Alcohol squeeze	Alcohol is injected into the formation to clean out deposits that have collected in the formation.
Fracture	The splitting of the rocks by pumping fluid into the well to apply pressure against the formation.

Cement plug	The placement of a volume of cement in the casing to abandon a well or isolate a completion interval.
Cement squeeze	Cement is squeezed into a completed interval to seal it off.
Packing device capped with cement	The setting of a mechanical device and capping with a volume of cement.
Casing patch	A mechanical apparatus used to seal a leaking casing or perforations.
Packing device, no cement	A packing device is set with no cement on top to abandon a zone. EUB approval may be required prior to performing this operation.
Remedial casing cement	Operations to place cement behind the casing by perforating the casing over a desired depth and circulating cement down the casing, through the perforations, and up the annulus.

Appendix 2 Unique Well Identifier

General Description

The unique well identifier (UWI) is the standard well identification that was developed for the petroleum industry by the Geoscience Data Committee of the Canadian Petroleum Association (CPA) and has been adopted by the oil and gas regulatory agencies of the four western provinces and federal areas. It consists of 16 characters, which make up four basic components:

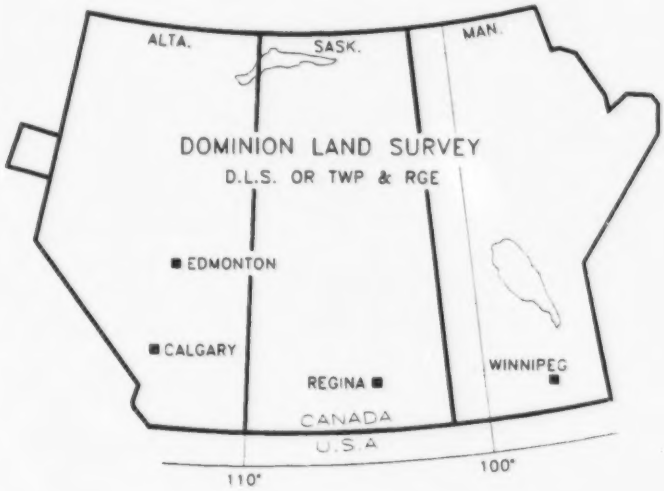
1) legal survey location
2) survey system code
3) location exception code
4) event sequence code

Together these define the approximate geographical location of the bottom of a drill hole and a specific drilling or producing event at the drill hole.

The unique well identifier, although based on the legal survey position of a well, is primarily for identification rather than location. The location component describes the bottomhole location of the well, not the surface position of the well.

Dominion Land Survey System

The legal survey location component for Alberta is the Dominion Land Survey system (DLS), which is used in Alberta, Saskatchewan, Manitoba, and a portion of British Columbia.



Unique Well Identifier Format

The correct unique well identifier format is the 16-character format shown below:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

The DLS system is designated in the unique well identifier format by a 1 in the first position.

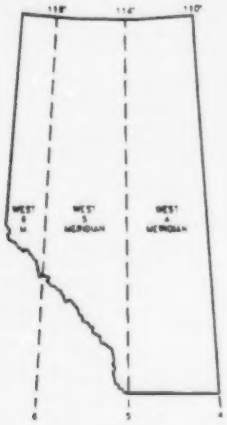
SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1															

Acceptable value(s): 1 for Alberta
Abbreviation: S or SS

Meridian

For the purposes of survey locations, the province of Alberta is subdivided into three areas defined by the **meridians** of longitude.

For unique well identifier purposes, these are referred to as west (W) of the fourth, fifth, and sixth meridians.



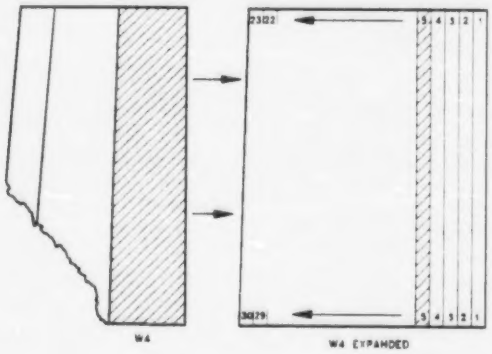
Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1												W	4		

Acceptable values: W4, W5, W6

Range

Each area (i.e., West 4, West 5, and West 6) subdivides into ranges, as shown below:



Example:

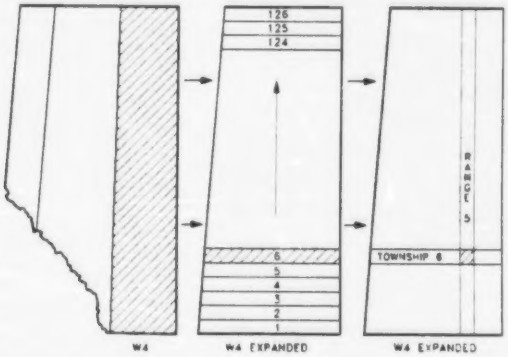
SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1										0	5	W	4		

Acceptable values: Ranges are numbered from 1 to 30. Note that West 6 meridian contains a maximum of 14 ranges only.

Approximate size: A range measures 9.7 km (6 miles) east to west.

Township

Each area west of a meridian subdivides north-south into townships, as shown below:



Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1							0	0	6	0	5	W	4		

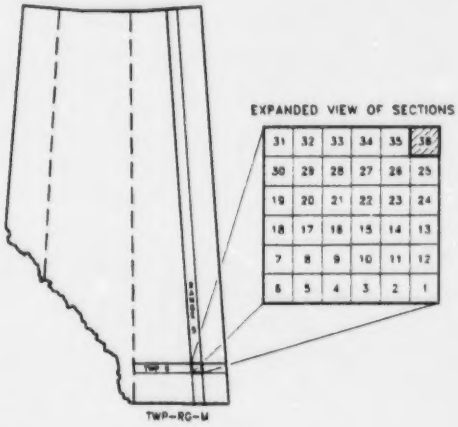
Acceptable values: Townships are numbered 001-126.

Approximate size: A township measures 9.7 km (6 miles) north to south.

Abbreviation: TWP

Section

After township, range, and meridian have been located for a drill hole, the next portion of the DLS is the section.



Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1					3	6	0	0	6	0	5	W	4		

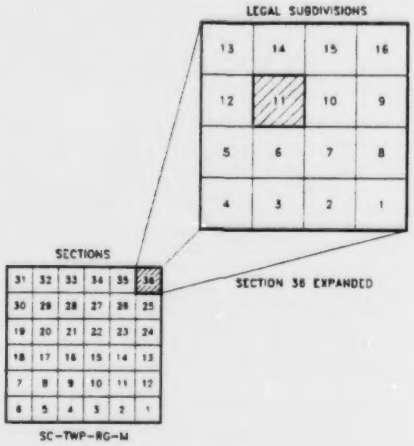
Acceptable values: Sections are numbered 1-36.

Approximate size: A section measures 1.609 by 1.609 km (1 mile by 1 mile).

Abbreviations: SEC or SC

Legal Subdivision

The smallest division in the DLS system is the legal subdivision.



Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1			1	1	3	6	0	0	6	0	5	W	4		

Acceptable values: Legal subdivisions are numbered from 1 to 16.

Approximate size: A legal subdivision measures 402 by 402 m (1320 by 1320 feet).

Abbreviation: LS or LSD

Location Exception Code

The location exception code is used to identify cases where there is more than one drill hole on the smallest land area described by the DLS system. That is, the location exception code is used to describe more than one drill hole in a legal subdivision.

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	0	2	1	1	3	6	0	0	6	0	5	W	4		

This example illustrates the second hole drilled in LSD 11-36-006-05W4.

Abbreviation: LE

In addition, the location exception is generally used to describe the sequence in which the drill holes were drilled in the legal subdivision.

Event Sequence Code

The event sequence code is a one-character code indicating the chronological sequence of a significant drilling and/or completion operation of a drill hole that yields a separate and unique set of geological or production data.

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	0	2	1	1	3	6	0	0	6	0	5	W	4		2

This example illustrates a second "event" in the second drill hole in LSD 02/11-36-006-05W4/2.

Acceptable values: 0-9

Exceptions: 1 is not acceptable.

Abbreviation: ES

Padding Character

This is an unused character in the unique well identifier format and is left blank. This position is required in other survey systems.

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	0	2	1	1	3	6	0	0	6	0	5	W	4		2

Abbreviation: P

Application to Resource Areas

The following section explains the exact usage of the unique well identifier as it applies to the oil and gas, oil sands, and coal resource areas.

Oil and Gas Areas

Examples:

The first well drilled in an LSD is indicated as

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	0	0													

The second well drilled in an LSD is indicated as

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	0	2													

The thirteenth well drilled in an LSD is indicated as

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	1	3													

Acceptable values: 00-19

Exceptions: 01 is not used.

Oil Sands Resource Area The oil sands resource area employs the same components of the unique well identifier as the oil and gas identifiers. However, the location exception portion of the unique well identifier has different code designations.

Oil Sands Location Exemption Codes

The following location exception designations are used for oil sands evaluation (OV) drill holes.

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	A	A													

Acceptable values: AA through HZ, with the sequence AA, AB, AC... AZ, BA, BB, BC... HW, HX, HY, HZ

Exceptions: The use of I or O is not acceptable (e.g., BI, BO, GI, GO, etc., are not acceptable).

The location exception codes for OV wells may not be assigned in the chronological order of drilling. For example, the first OV well drilled in an LSD may have a location exception code other than AA.

Coal Resource Area

The Coal Act specifies that coal drill holes are identified by section, township, range, meridian, and coordinates from the section boundaries. For the purpose of consistency throughout the resource areas, coal drill holes are additionally identified by the unique well identifier.

Coal Location Exception Code

Coal drill holes employ the unique well identifier in the same manner as oil and gas and oil sands resource areas, but with modifications to the location exception code.

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	1	A													

Acceptable values: 1A through 9Z, with the sequence 1A, 1B, 1C… 1Z, 2A, 2B … 2Z, 9A… 9X, 9Y, 9Z

Exceptions: The use of I or O is not acceptable (e.g., 1I, 1O, 7I, 7O, etc., are not acceptable).

The location exception may or may not be assigned in the chronological order of drilling. For example, the first coal drill hole in an LSD may have a location exception code other than 1A.

Multiple Resource Occurrences

Where more than one resource is encountered by a drill hole, each resource is identified by a unique well identifier with the appropriate location exception code.

Examples:

For a drill hole location of

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1			1	0	2	0	0	3	0	1	5	W	4		0

that encounters both gas and coal, the gas resource would be identified as

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	0	0	1	0	2	0	0	3	0	1	5	W	4		0

and the coal resource would be identified as

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	1	A	1	0	2	0	0	3	0	1	5	W	4		0

Although physically only one drill hole exists, there are two unique well identifiers, each designating the appropriate resource. It is possible to have a single drill hole penetrate three different resources. The resulting identification or view of the drill hole from each resource perspective is shown in the following example:

For a drill hole location of

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1			1	0	2	0	0	3	0	1	5	W	4		0

the oil and gas identification (first well in LSD) would be identified as

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	0	0	1	0	2	0	0	3	0	1	5	W	4		0

the oil sands identification (first oil sands occurrence in LSD) would be

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	A	A	1	0	2	0	0	3	0	1	5	W	4		0

the coal identification (first coal occurrence in LSD) would be

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
1	1	A	1	0	2	0	0	3	0	1	5	W	4		0

Quadrants

When the drilling spacing unit (DSU) is less than 16 hectares (40 acres) or one LSD, the following designation is used:

1 LEGAL SUBDIVISION

QUADRANT C	QUADRANT D
QUADRANT B	QUADRANT A

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	A														

Acceptable values: A, B, C, D

Approximate size: One quadrant measures 201 by 201 m.

The second digit of the location exception code indicates the chronological sequence in which the wells were drilled in the quadrant.

Example:

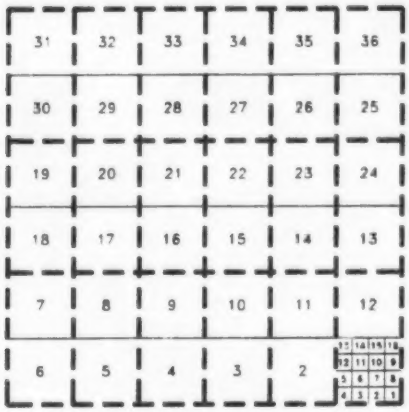
SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	A	0													

This example indicates the first well drilled in Quadrant A.

Acceptable values: 0-9

Exceptions: 1 is not acceptable.

Road Allowances



The above darkened lines indicate road allowances. A well drilled in a road allowance is referenced either south (S) or west (W) of the legal subdivision indicated in the identifier.

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	S														

Acceptable values: S or W

Approximate size: A road allowance is 20 m wide.

The second digit of the location exception code indicates the logical sequence in which the wells were drilled in the road allowance.

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	S	0													

This example indicates the first well drilled in the road allowance.

Acceptable values: 0-9

Exceptions: 1 is not acceptable.

Freshwater Sources

The location exception portion of the unique well identifier is also used to designate locations from which fresh water is drawn. Freshwater sources are

- wells (F)
- lakes (L)
- rivers (R)

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	F														

Acceptable values: F, L, R

The second digit of the location exception code indicates the chronological sequence in which the freshwater source locations were activated.

Example:

SS	LE		LSD		SC		TWP			RG		W	M	P	ES
	F	1													

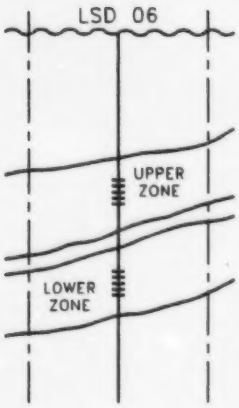
This example indicates the first freshwater source well (or location).

Acceptable values: 1-9

Exceptions: 0 is not acceptable.

Identifier Usage Examples of Unique Well

1. Dual completion

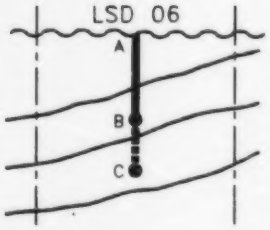


Initial completion retains the originally assigned identifier with the zero event sequence, e.g., 00/06-12-045-12W4/0.

Subsequent completions are assigned the next event sequence. e.g., 00/06-12-045-12W4/2.

Event sequence codes are assigned chronologically. However, if both zones are completed in the same operation, the lower zone is deemed to be completed first.

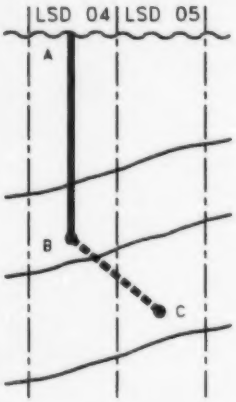
2. Deepening of an existing well to a new geological horizon



Existing well A-B has identifier of 00/06-14-045-12W4/0.

Deepened portion of the well B-C is assigned a new identifier of 00/06-14-045-12W4/2.

3. Deepening of an existing well to a new geological horizon by whipstocking

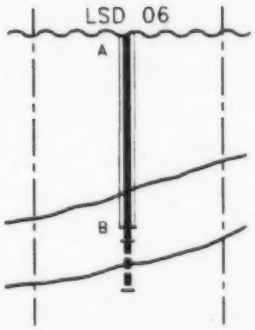


Existing well A-B has an identifier of 00/04-14-045-12W4/0.

When the deepened portion is projected to bottom in LSD 5 or it inadvertently bottoms in LSD 5, the new hole from A to C is assigned a new identifier of 00/05-14-045-12W4/2.

It is given an event sequence of 2 to indicate that the new borehole originated from an existing well.

4. Re-entry of an existing abandoned well

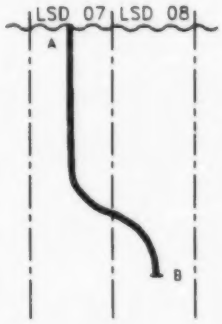


This case applies when the abandonment plugs are drilled out.

Existing abandoned well A-B has an identifier of 00/06-17-045-12W4/0.

Re-entry data are assigned a new identifier of 00/06-17-045-12W4/2.

5. Directionally drilled well projected to bottom in a specified legal location

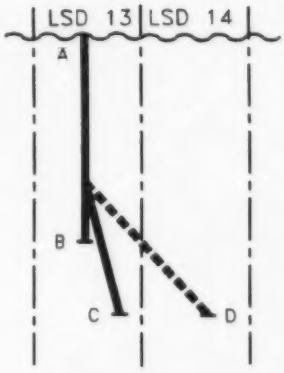


At the time of licensing the well is assigned its projected location.

When projected to LSD 08 it is assigned an identifier of 00/08-18-045-12W4/0.

When projected to LSD 07 but inadvertently bottomed in LSD 08, the identifier at time of licensing would be 00/07-18-045-12W4/0 and it would subsequently be changed to 00/08-18-045-12W4/0.

6. Whipstocked hole from an existing well

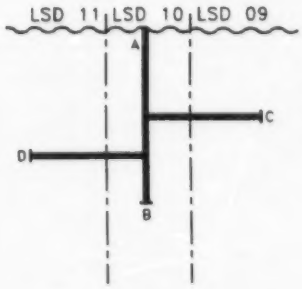


Existing well A-B has an identifier of 00/13-20-045-12W4/0.

When the whipstocked hole is projected to bottom in LSD 13, it is assigned an identifier of 00/13-20-045-12-W4/2, which remains unchanged if it actually bottoms in LSD 13 (e.g., hole A-C).

When the whipstocked hole is projected to bottom in LSD 13 but inadvertently bottoms in LSD 14 (hole A-D), it is assigned a new identifier of 00/14-20-045-12W4/3. It is given an event sequence of 3 to indicate that the new borehole originated from an existing well.

7. Horizontal Wells



Existing well A-B has an identifier of 00/10-21-045-12W4/0.

Bore hole A-C would have an identifier of 00/09-21-045-12W4/2.

Bore hole A-D would have an identifier of 00/11-21-045-12W4/3.

Each new borehole (A-C and A-D) is given a sequential event to indicate that it originated from an existing well.

Appendix 3 Minimum Data Submission Requirements for Daily Record of Operations

Well Data	Well name, location, contractor, rig number, kelly bushing elevation (KB), and blowout preventer (BOP) elevations.
Tests	Details of all BOP and choke manifold pressure tests, test duration, and initial and final test pressures. Details of daily mechanical tests (including equipment tested).
	Air shut-off tests: details of all predrill-out and weekly shutdown of mechanical tests.
	BOP drills: details of all predrill-out and weekly drills, including mode of operation (drilling, tripping, or out of the hole), equipment used, and training requirements.
Drilling Information	Spud date, bit size, depth of hole at beginning or end of each tour, deviation surveys, whipstock-setting depths, directional surveys, fishing details, total depth, rig release date.
Drilling Occurrences	Lost circulation: depth and interval, density and volume of fluid lost, amount and types of materials used.
	Gas kick: depths, shut-in and circulating pressures, influx volume, control procedures.
	Water flow: depth, pressures, volume control procedures.
Formation Tests	Drillstem test: test number, interval, valve open time, gas, oil, or water to surface times and flow rates, recovered volumes.
	Wireline tests: test number, depth, duration, recovery.
	Flow tests: depths, recoveries, fluid levels, flow rates.
	Swab tests: depths, recoveries, fluid levels.
Cores	Core number, interval, size, recovery.
	Side-wall core; individual depths.
Logs	Types of logs run and corresponding intervals.
Abandonment or Plug Back	Plug number, interval, plug setting, amount of cement and additives, slurry weights, time and depth the plug is felt, drilled-out depth.
	Bridge plugs: setting depth, pressure test details, amount of cement in cap.
	Surface abandonment: details, including cutting of casing, cement cap, or welding on plate.

Casing and Liners	Size, setting depth, liner top, weight, grade, collar type, new or used (if mixed string is run, this information is required for each section).
Case Cementing	Amount and type of cement and additives, slurry weight, slurry volume, returns to surface, cement top (if determined).
Completion	Packers: type, setting depth.
	Perforations: interval, type, number; if notched, quantities of sand and fluid and treating pressure.
	Acidizing: interval, type, concentration, volume of acid and additives, wash or squeeze, feed rates, and pressures.
	Squeeze jobs: interval, amounts and types of materials squeezed, feed rates, and pressures.
	Fracturing: type, quantity, and size of propping agents, type and volume of carrier, additives, type and quantity of plugging agents, feed rates, and pressures.

Appendix 4 Feedback Form for *Guide 59*

The EUB welcomes your comments on *Guide 59: Well Drilling and Completion Data Filing Requirements*. Your responses will be considered when the guide is being updated. Please return your comments to

Alberta Energy and Utilities Board
Production and Well Data Services Group
Well Records Section
640 – 5 Avenue SW
Calgary, Alberta T2P 3G4
Fax (403) 297-7303

Duplicate this form for repeated use. Thank you for your time and consideration.

Please circle your response using the following scale:

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	I found the language in the guide clear.	1	2	3	4	5
2.	I found the instructions easy to follow.	1	2	3	4	5
3.	I found it easy to find specific information in the guide.	1	2	3	4	5
4.	The guide helped me understand clearly how to file forms:					
	WR-1 Well Identification and Operational Status Report	1	2	3	4	5
	WR-2 Well Drilling Data	1	2	3	4	5
	WR-2A Well Incident Data	1	2	3	4	5
	WR-3 Well Completion Data	1	2	3	4	5
5.	I found it easy to tell what information must be attached to the submission.	1	2	3	4	5
6.	I found it clear that I had to use documents in the Appendices and reference material to be fully aware of all the regulations and requirements that apply to my submission.	1	2	3	4	5

Additional suggestions and comments (use back of page also if required):